

Date of Birth – Reference Guide

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<u>Topic</u>	<u>Page</u>
Summary: Date of Birth	1
Definition	1
Data Storage and Field Values	1
Missing Values	2
Processing Overview	2
EDI Summary	2
Discussion	2
Implementation: Date of Birth	4
Data Collection: Hardcopy Report Form	4
Data Entry: Electronic Forms	5
Ideas/Tips for Electronic Data Entry Shortcuts	6
Data Processing: Validations and Edit Checks	8
Data Processing: From Hardcopy to Storage	9
Data Transmission: Electronic Data Interchange	11

Summary: Date of Birth

Definition

Person's date of birth.

Data Storage and Field Values

The variable name noted below specifically applies to the date of birth of the subject of the report. Variable names for other uses of date of birth, such as the date of birth of the mother of the subject of report, or date of birth of the subject's partner, are not discussed in this document but will be discussed in subsequent releases.

Variable Name:	DOB	
Type:	character	
Length:	8	
Storage Format:	YYYYMMDD (Actual storage format.)	
Display Format:	MM/DD/YYYY (Cosmetic format on forms/entry screens.)	
Field Values:	Year component (YYYY):	0001-9998 *
	Month component (MM):	01-12
	Day component (DD):	01-31

* NOTE: Programs are encouraged to apply an edit check to the year component so that birth years before 1850 are not valid for entry.

Missing Values

If the value of the Date of Birth data element is missing, or does not adhere to the CIPHER standard, the data element may be noted as blank to indicate a missing value. If the program requires the reason the value is missing, a separate 1-character field should be used to note the reason for the missing data. The use of a Missing Value Reason data element must adhere to the CIPHER definition and rules associated with missing data as described in Appendix I - Missing Value Reason. The use of an MVR applies only when all date components are missing. If there is at least 1 non-blank component, Missing is not applicable.

Special Note on Rules Associated with Unknown Date Components

Blanks are used to represent unknown date components. However, only certain combinations of known and unknown date components are valid in the CIPHER date definition. Refer to the Implementation subsection on Data Processing: Validations and Edit Checks, below, for detailed information.

Processing Overview

Special requirements apply. Refer to the Implementation subsection on Data Processing: Validations and Edit Checks, below, for detailed information.

EDI Summary

Note: EDI sections are under construction.

Discussion

Date of Birth data can be used to calculate a person's age, to distinguish between persons with the same name, and in registry matching/linkage efforts.

The Date of Birth data element is defined in CIPHER date format where month, day, and year date components are collected in character format. The Date of Birth adheres to this CIPHER date structure and must adhere to the CIPHER definition and rules associated with missing date data as described in Appendix II - Dates. Therefore, the Date of Birth can be entirely missing (month, day, and year unknown) or partially missing (day unknown, but month and year known; or day and month unknown, but year known). For this reason, the CIPHER date definition adheres to *character* format.

A majority of the management of Date of Birth data will be performed through the system control for the Date data concept. The system control provides entry controls supporting character format dates as well as entry of missing date components.

In addition, a number of Date Functions are provided for use with analysis of dates stored in character format. The Date Functions are intended to be a common software component shared across programs to support consistency and reuse, and to facilitate analysis and comparison of date data stored in character format. Further, the functions support missing components. For more information on other features available through the Date control, refer to the System Architecture Guide.

Implementation: Date of Birth

The implementation examples noted below specifically apply to the date of birth of the subject of report. The implementation for other uses of date of birth, such as date of birth of mother of the subject of the report, or date of birth of the subject's partner, can be patterned after these implementation examples.

Data Collection: Hardcopy Report Form

One hardcopy “pre-formatted” field is associated with the Date of Birth data element. The pre-formatted hardcopy field reflects a standard calendar-type date in which date components are separated with a forward slash (/). The field is formatted with 2 characters for the month component, followed by a slash (component separator), 2 characters for the day component, followed by a slash (component separator), and 4 characters for the year component. In summary, the pre-formatted hardcopy field is structured as follows: MM/DD/YYYY

The Date of Birth field is noted on the report forms (and entry screens) in the more common “calendar” order and format of MM/DD/YYYY, but is stored in YYYYMMDD format (for storage of full month/day/year type dates)

Refer to Figures 1 through 3 below for examples of hardcopy report form sections used for Date of Birth data collection.

Figure 1: **Blank Hardcopy Form section used to collect Date of Birth.**

<u>Date of Birth</u>
Enter date of birth in month/day/year format: / /

Figure 2: **Completed Hardcopy Form section used to collect Date of Birth**

<u>Date of Birth</u>
Enter date of birth in month/day/year format: <u>08/15/1972</u>

Figure 3: Complete Hardcopy Form section used to collect Date of Birth with day component missing.

Date of Birth

Enter date of birth in month/day/year format: 08/ /1972

Day is unknown

Missing Values – Hardcopy Form

Examples of hardcopy forms using the associated Missing Value Reason data element can be found in Appendix I – Missing Value Reason. The hardcopy form need only contain a Missing Value Reason if the program requires the rationale for a missing value for Date of Birth.

Data Entry: Electronic Forms

One entry screen field or variable is associated with the Date of Birth data element. The *cosmetic* format and structure of the screen field parallels the hardcopy report form in that entry of the date uses a standard calendar-type format, with a forward slash to separate date components (/). That is, date fields are noted on the entry screens (and hardcopy report forms) in the more common “calendar” order and format of MM/DD/YYYY . However, the entered Date of Birth data are stored in reverse order as YYYYMMDD .

A pre-formatted field is used on all electronic entry screens for collection of Date of Birth. The field is visually formatted with 2 characters for the month component, followed by a hard-coded slash (component separator), 2 characters for the day component, followed by a hard-coded slash (component separator), and 4 characters for the year component. The component separator (/) is fixed and is automatically bypassed during key entry of these three date components (month, day, and year).

In summary, the full Date of Birth electronic screen entry field is *cosmetically* displayed on the screen in MM/DD/YYYY format; key entered in three screen entry fields (MM/DD/YYYY) storing MM (2-character month), DD (2-character day), and YYYY (4-character year); and stored in YYYYMMDD format in the associated database.

Ideas/Tips for Electronic Data Entry Shortcuts

A majority of the management of electronic entry of Date of Birth data can be performed through the system control for the Date data concept. The system control provides entry controls supporting character format dates as well as entry of missing date components. Note that entry routines can be set up so that the entry operator automatically advances from one component to the next. For example, once the entry operator enters a number in the "month" component, the cursor can automatically advance and position to the "day" component.

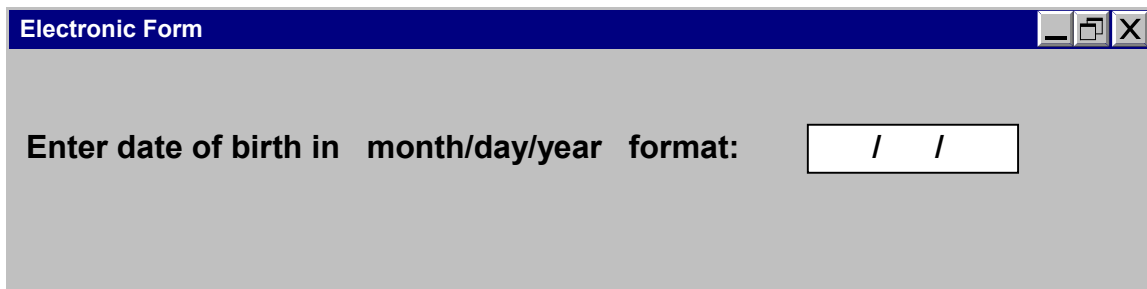
The entry routines can also be set up so that single digits entered in the "month" and "day" component are automatically right justified with leading zeros inserted. For example, if the entry operator enters "9" in the "month" component and presses <Enter>, the entry program can automatically re-format the "9" to "09" and advance the operator to the "day" component.

Similarly, the entry program can choose to adjust a 2-character entry year and prefix the appropriate century notation based on the value of the 2-character entry. That is, if the operator enters a year value in the range 01-09, this more than likely reflects a year in the 2000s and not the 1900s, whereas a value in the range 10-99 more than likely reflects a year in the 1900s and not the 2000s. For example, if the entry operator enters "98" in the "year" component, followed by <Enter>, the entry program can automatically re-format the "98" to "1998" and save the entry operator a few keystrokes. Of course, there are some date fields (such as birth date) for which such assumptions about appropriate century cannot be made.

For more information on entry control features, refer to the Date control documentation within the System Architecture Guide.

Refer to Figures 4 through 6 below for examples of electronic entry screens used for the purposes of Date of Birth data collection.

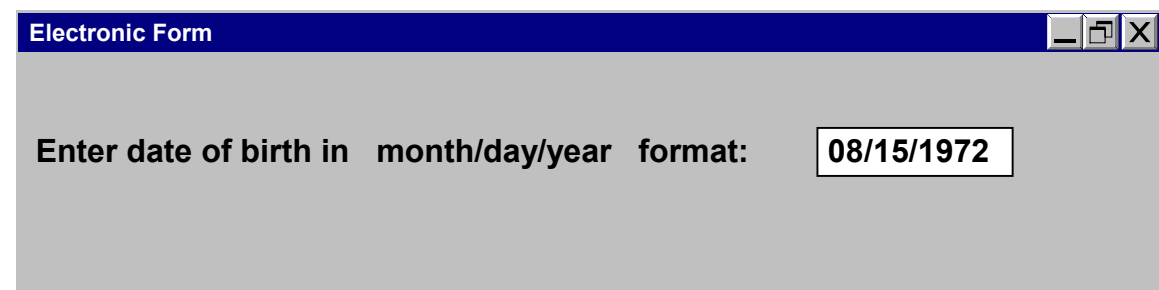
Figure 4: Blank Electronic Form used to collect Date of Birth.



Electronic Form

Enter date of birth in month/day/year format:

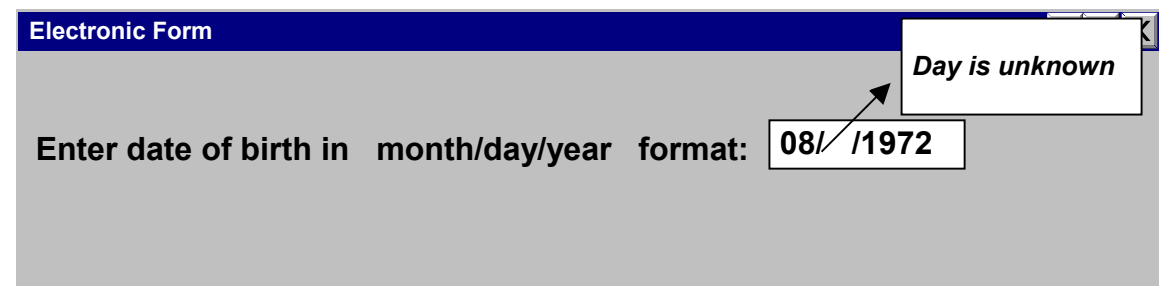
Figure 5: Completed Electronic Form used to collect Date of Birth.



Electronic Form

Enter date of birth in month/day/year format:

Figure 6: Completed Electronic Form used to collect Date of Birth, where the day component is missing.



Electronic Form

Enter date of birth in month/day/year format:

Day is unknown

Missing Values – Electronic Form

Examples of electronic forms using the associated Missing Value Reason (MVR) data element can be found in Appendix I – Missing Value Reason. The electronic form needs to handle the Missing Value Reason only if the program requires the rationale for a missing value for Date of Birth. If the user selects a Missing Value Reason code during data entry, the Date of Birth field will be blank and the screen will display the MVR information next to the blank field. The use of a Missing Value Reason data element applies only when all components of the Date of Birth are blank. If there is at least 1 non-blank date component, Missing is not applicable.

Data Processing: Validations and Edit Checks

Data elements entered in the electronic form will be edited as outlined below. If the program elects to use an associated Missing Value Reason data element for Date of Birth, it will be edited as outlined in Appendix I – Missing Value Reason.

Information on general validations that apply to all CIPHER dates can be found in the Implementation section of Appendix II – Dates. In addition, the Date of Birth data are involved in validations associated with calculated ages. Refer to the Calculated Age section for more information.

Date of Birth:

- Date of birth is stored in character format.
- The Date of Birth date is formatted to collect month/day/year (MM/DD/YYYY).
- The display format differs from the storage format for Date of Birth, as noted below:

Display format:	MM/DD/YYYY
Storage format:	YYYYMMDD

- Valid values for the 2-character month (MM) component range from 01-12.
- Valid values for the 2-character day (DD) component range from 01-31.
- Valid values for the 4-character year (YYYY) component range from 0001-9998.
- Blanks are acceptable values for each component (MM, DD, or YYYY) when the particular date component is missing. However, only certain combinations of known and unknown date components are valid in the CIPHER Date of Birth definition, as described below:

a) The date can be missing entirely. In this case, YYYY=' ', MM=' ', and DD=' '. The data are stored as YYYYMMDD=' '.

b) The date can be missing partially in two valid ways:
Day (DD) is unknown but month (MM) and year (YYYY) are known.
In this case DD=' ', MM='MM', and YYYY='YYYY'.
The data are stored as YYYYMMDD='YYYYMM '.

or

Day (DD) is unknown and month (MM) is unknown, but year (YYYY) is known. In this case DD=' ', MM=' ', YYYY='YYYY'. The data are stored as YYYYMMDD='YYYY '.

Data Processing: From Hardcopy to Storage

The following example illustrates the flow of information from data collection on the hardcopy form, to data entry into the electronic form, to validations and storage in the database. Refer to Figure 7 for an illustration of Date of Birth data flow where all components of the date are known. Refer to Figure 8 for an illustration of Date of Birth data flow where the day component of the Date of Birth is unknown.

The process begins with the blank Hardcopy data collection form used to collect Date of Birth:



The Date of Birth information is captured on the form, creating a completed Hardcopy data collection form:



The process continues with a blank Electronic form/data entry screen used to capture Date of Birth:



The value from the hardcopy form is entered into the Electronic form/data entry screen and then the edits and validations are performed on Date of Birth:



The completed Electronic form/data entry screen is redisplayed and Date of Birth is stored in the database:

Figure 7: Completed Electronic Form to Storage where all components of the Date of Birth are known.

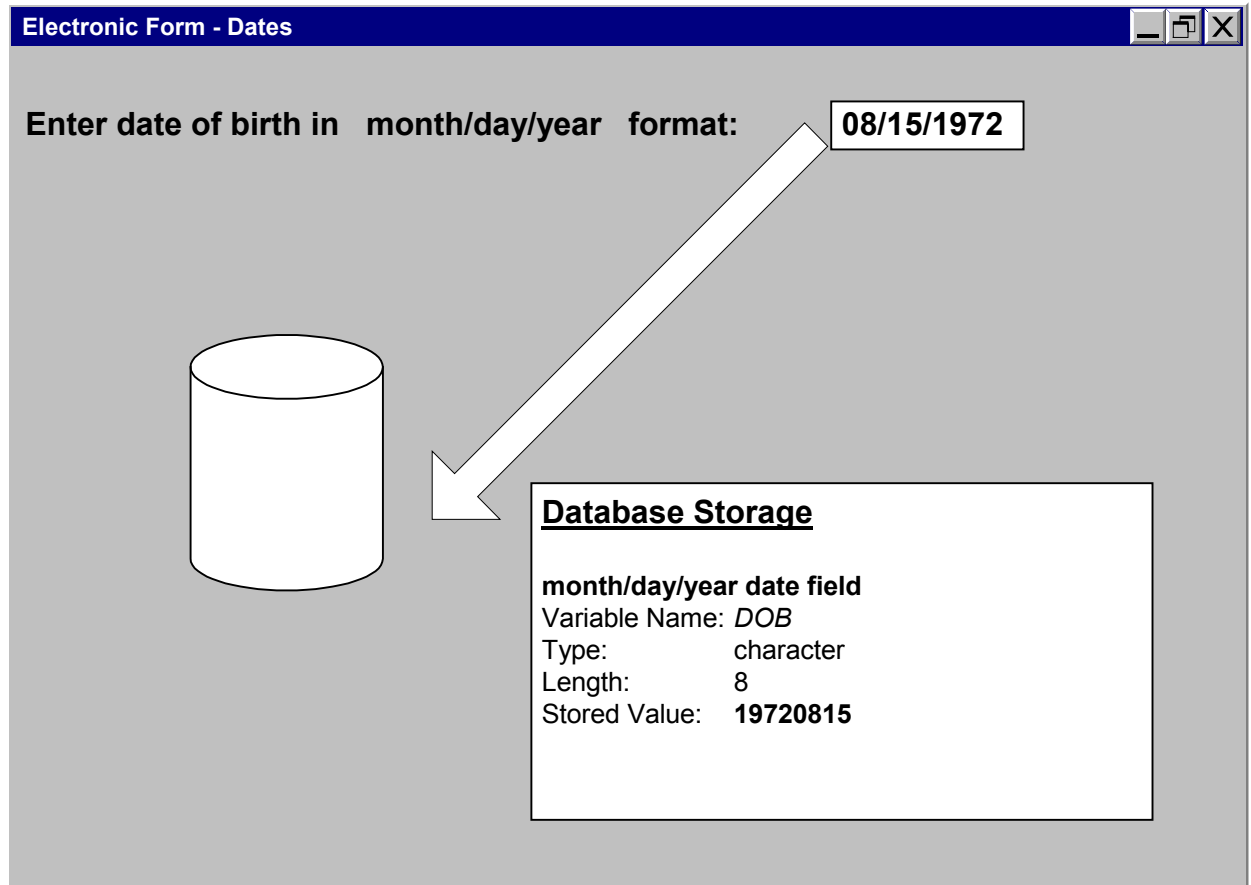
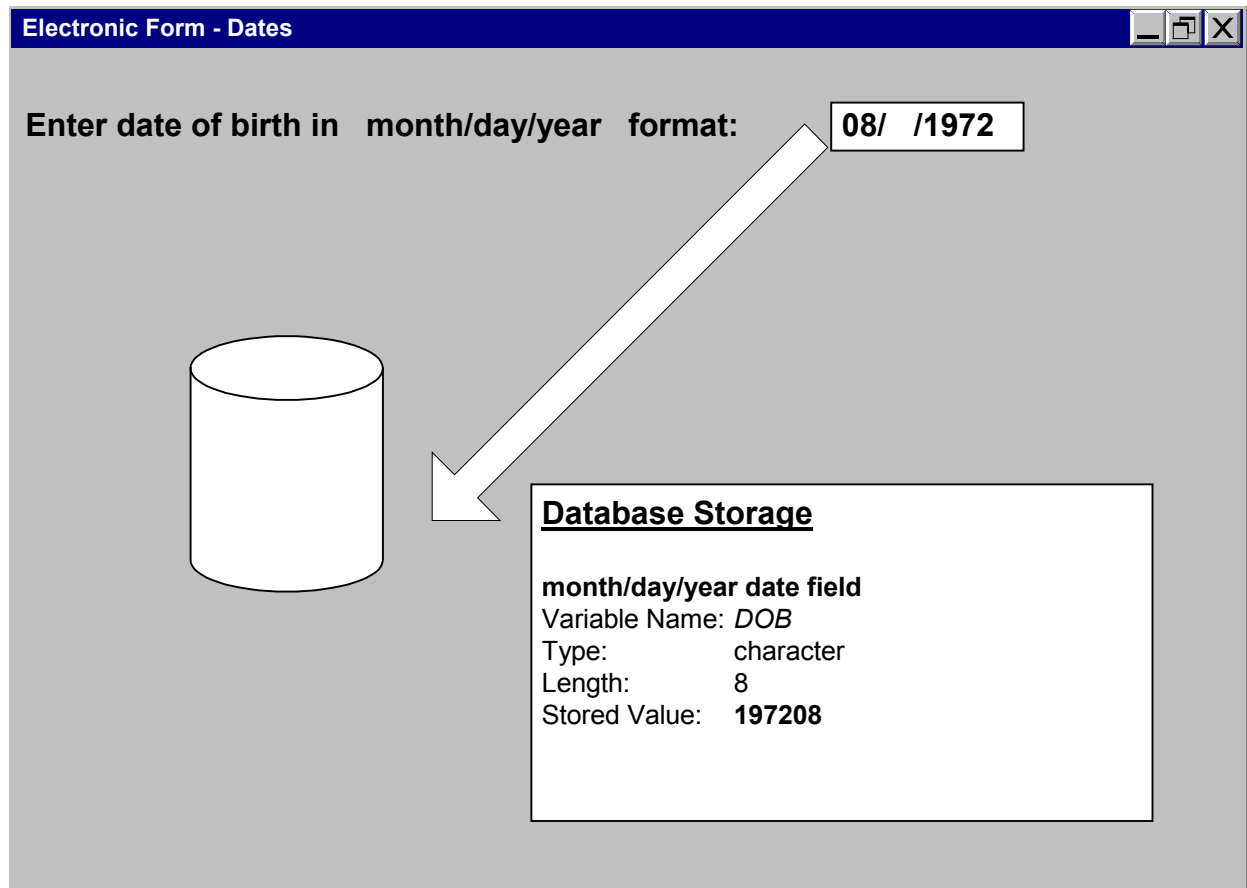


Figure 8: Completed Electronic Form to Storage where the day component of the Date of Birth is unknown.



Data Transmission: Electronic Data Interchange

Note: EDI sections are under construction.